

Appln. No. 09/399,540  
Docket No. 6321-147  
Amdt. dated January 8, 2004  
Reply to Office Action of Sept. 8, 2003

### REMARKS/ARGUMENTS

This response is filed in reply to the Office Action of September 8, 2003. Accompanying this response is a Petition for a one-month retroactive extension of time and the appropriate fee extending the period for response to January 8, 2004.

In paragraph 2 of the Office Action, the formal drawings submitted by the Applicants have been accepted. Accordingly, the objection to the drawings has been withdrawn. Also in paragraph 2, the rejections under 35 U.S.C. § 102(b) have been withdrawn.

In paragraph 4, claims 1-17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over "Modeling Supply-Chain Networks by a Multi-Agent System", F. Lin *et al.*, Proceedings Systems Sciences (Jan. 1998) (hereafter "Lin") in view of "Using Simulation to Schedule Manufacturing Resources", H. Czarnecki, *et al.*, Proceedings of 1997 Winter Simulation Conference, ACM (1997) (hereafter "Czarnecki").

In response, the Applicants have amended independent claim 1 to clarify the nature of the present invention. In particular, the Applicants have amended claim 1 to specify that multiple manufacturing processes can be object modeled and compared with one another according to user-specified input parameters. Support for this amendment can be found on page 4, lines 2-7 and page 9, lines 15-19 of the Applicants' specification. Claim 4 also has been amended to correct a typographical error.

Prior to addressing the rejection on the art, a brief review of the Applicants' invention is appropriate. The Applicants have invented a method and system for distributed agent-based non-expert simulation of manufacturing process behavior. In accordance with the Applicants' invention, manufacturing process behavior, such as that exhibited by push, pull, and takt systems, can be simulated through the use of distributed agents in single-processor computers.

According to the present invention, at least two different manufacturing techniques, each of which having multiple processes, can be object modeled. The two different manufacturing techniques can be selected from a pull, a push, or a takt

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manufacturing technique. Distributed agents can be associated with each process of each manufacturing technique selected for object modeling. Each agent can be programmed to respond to discrete events according to the particular manufacturing technique to which that agent is associated, i.e. a pull, a push, or a takt manufacturing technique. Notably, each discrete event can trigger a programmed response within an agent. Accordingly, each of the modeled manufacturing techniques can be compared according to user-specified input parameters to determine a preferred manufacturing technique.

Turning to the rejection on the art, claims 1-17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Lin in view of Czarnecki. Lin relates to a multi-agent information system approach to modeling a product order fulfillment process (OFP) in a supply chain network (SCN). Lin, however, does not teach or suggest that two different manufacturing techniques, i.e. selected from a push, a pull, or a takt manufacturing technique, can be object modeled and compared with one another according to user-specified input parameters. Moreover, as noted by the Examiner, Lin fails to disclose modeling takt time scheduling techniques.

Czarnecki suffers from the same deficiencies as Lin. In particular, while Czarnecki discloses simulating a takt time scheduling technique, Czarnecki, like Lin, fails to teach or suggest that two different manufacturing techniques can be object modeled and compared using user-specified input parameters. The Applicants' invention allows two manufacturing techniques selected from a pull, a push, or a takt manufacturing technique to be object modeled. Each modeled manufacturing technique can be compared based upon user-specified input parameters.

As neither Lin, Czarnecki, nor any combination of the two teaches or suggests the Applicants' invention as claimed, withdrawal of the 35 U.S.C. § 103(a) rejection with respect to claims 1-17 is respectfully requested.


The Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. The Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the

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Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

Date: 1/8/04

  
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